4615, Lake Central School Corp

PROJECT ABSTRACT

Lake Central School Corporation (LCSC) is applying for funding through this competitive grant to position us with the ability to provide interactive instructional technology to our at-risk elementary school populations with the greatest need including one school in focused improvement. Additionally, the grant is seen as an opportunity to improve the alignment of the grade 7 and 8 mathematics and science curriculum with I-STEM standards and bring interactive technology applications to those students on a daily instructional basis. The middle school project focuses on providing interactive technology to the school with the greatest poverty need, but will include the other two schools promoting a smooth transition for grade 8 students into our high school programming. It provides the rare opportunity to form a cadre of teachers to promote, expand and guide the further technology needs of students and staff in all instructional areas and coordinate the long-range district technology plan with daily instructional practice.

To achieve our goals, LCSC has invited the School City of Hobart (SCH) to serve as a partner and mentor because of their prior experience with interactive technology applications (Mobis, SMART, responders) desired through this grant. They have experience with handheld student response hardware which is a component of this technology proposal. The SCH has an experienced staff from which to draw expertise in the instructional application of interactive technologies and student response hardware in all grade levels. They have technological expertise to assist with implementation process at the classroom level. There is a willingness to collaborate in a teacher-share program during summer months to refine the application of these technologies to daily instruction.

One local parochial school has indicated a desire to participate in the grant. The school is small, but does receive services under Title 1. The school would mirror the interactive technology plan for its upper grades.

Proposal Goals:

1) Increase student access to interactive technology;

2) Increase student engagement in instruction;

3) Increase student opportunities to provide feedback on lesson understanding;

4) Increase teacher application of technology into daily instruction;

5) Align instruction in science and mathematics to I-STEM in middle school grades 7 and 8;

6) Increase teacher and student collaboration to facilitate expanded technology applications;

7) Create an inter-district forum for instructional improvement and student learning

To best meet these goals and provide meaningful learning and teaching experiences, we need to provide the interactive technology such as interactive whiteboards or interactive tablets. The use of handheld responders would be implemented as a means to further involve students in the lesson presentation and provide teachers with an instantaneous method of evaluating student understanding. There is a high level of motivation among staff to implement this type of technology and a willingness to alter instructional practices to take full advantage of the technology.

A further component of this proposal revolves around a strong commitment to professional development not only in the use of the technology, but in creating meaningful classroom instruction resources for all staff members to access. A summer schedule for collaboration between the partners to share ideas in creating learning opportunities would be implemented with the successful application for grant funding. The alignment of curriculum and instruction with I-STEM expectations would also be addressed in summer professional development.

This type of technology applied to the classroom is an important step to improved student motivation and conceptual understanding for at-risk students. However, its application to students at all abilities cannot be minimized as a beneficial offshoot to promote higher levels of performance in our

NEEDS/BASELINE

Research on interactive whiteboard technology indicates a strong correlation to their inclusion in instruction, increased student understanding and improved student motivation (Bui, V, 2009; Shannon and Cunningham, 2009; Piamo, T., 2009). As these are intricately interwoven into daily instructional practice, the beneficial effects produce long-term improvements. The individual student responder system has proven to have a positive impact. Penn State University¿s Schreyer Institute for Teaching Excellence has found responders to be a highly engaging implement in instruction. Similarly, Stowell and Nelson (2007) in an article in Teaching of Psychology extol the benefits of electronic response systems. They cite the increased student participation in learning and emotional benefits as solid reasons to incorporate this technology.

Currently, student and teacher access to interactive technology is limited within the school district. A recent (November, 2009) survey of teaching staff reveals only 4.3 % of teachers currently use interactive technologies within the classroom on a daily basis. The same survey results indicate a willingness of 57.3% of teaching staff would use the technology if it was available. Answers to student responder technology usage showed 44.8% of staff members used them Seldom/Never. Teachers responded further that 50.3% would employ the technology if available to them. When this information is compared to the 64.3% of respondents stating they were ¿comfortable using technology¿, the gap in application to instruction is evident.

The elementary portion of this proposal addresses socio-economic status (SES) of the school district as it identifies four of the six elementary schools as Title 1 eligible. Three of those have a SES of at least 20% and are the target schools for this project. Of those three schools, one is currently in Focused Improvement for failing to meet AYP requirements. Subcategories that typically are the lowest in the three schools are students with IEP¿s, students qualifying for Free/Reduced lunch and ethnicity

subgroups. Student motivation is often cited as a concern of classroom teachers in discussions related to Response to Intervention initiatives in these three schools. The three elementary schools selected will use the grant to improve Reading and Mathematics instruction in grades K-4.

In considering ISTEP+ E/LA results for our three highest poverty elementary schools, Homan had a Special Education failure rate exceeding the district average of 20%. Peifer exceeded district average by 30% and Protsman was at the district average. Students on free lunch averaged 3% lower in these three schools.

Mathematics results show that at two schools, students on Free/Reduced lunch exceeded the district average for Did Not Pass (DNP) an average of 8%, while one school was better than the average by 1%. For Ethnicity subgroups for which a sufficient sample size was available, these three schools exceeded the district average from 14-22%. Only one school was below the average for one of the ethnicity subgroups.

Middle school results for Math reveal that Grimmer, which has the highest poverty rating for Free/Reduced lunch, exceeded the district DNP rate by 3%. Another middle school also had higher than desired rates by exceeding the average by 10%. This would indicate that although poverty in general is not sufficient to rate high for Title 1 designation, students in poverty are achieving at low rates and should be supported through technology interaction.

For ethnicity subgroups in middle schools, Grimmer exceeded district averages in three scored subgroups by 4, 7, and 44%. The other two schools also had similar discrepancies. Again, this would support the concept that integrated technology is a needed intervention at all three schools to meet the diverse needs of all learners.

GOALS/OBJECTIVES

The grant offers a tremendous opportunity to impact instruction and learning within the school district and advance the available technology within our partner district. The project creates an opportunity to provide intensive staff development in the areas of science and mathematics in the middle schools to align curriculum with I-STEM standards. This project will enable LCSC to improve the focus of the district technology plan and facilitate a comprehensive instructional support structure for teachers and learners alike.

Goal One increases the amount of interactive technology available to teachers for instructional purposes and fosters student engagement in learning. Currently, there is no access to student responder technology in the selected elementary schools. One school has interactive whiteboards available to a limited number of staff and there are no interactive tablets. The project¿s success in improving this access will be easily evaluated and attainable within the scope of this project. In middle schools, the access to student responder technology is currently 1 for every 9 teachers. The project triples the capacity. Interactive tablets are currently not available. The project would have an immediate and wide-spread impact in student engagement.

Goal Two, increasing student motivation for learning, partnered with Goal Three is to provide a more immediate method of formative assessment and feedback to students. The technologies anticipated through this grant, specifically the student responder technology, will immediately impact a teacher¿s ability to assess student understanding in a non-threatening manner. During a visit to our partner corporation, students using these technologies all cited this as an important component. Students stated a feeling of increased learning because formative assessment using the responders allowed teachers to immediate clarify and reteach. Test results were immediately available to teachers. This further improves their ability to remediate promptly. Our proposal will include a survey of student attitudes toward learning prior to the first introduction to the technology and a follow-up survey at the end of the school year. The interactive tablets will promote the successful achievement of these goals at all levels of implementation.

Goal Four of increasing teacher application of technology in daily instruction is measureable and attainable within the first year. A recent survey of staff indicates a strong desire to use interactive technology in daily teaching. Student responders were indicated for usage by 54.5% of respondents. Interactive whiteboards were cited by 65% of those responding as a tool they would use if available. By providing the access available through the funding of this grant, there is a persuasive indication daily instruction provided to students would include a higher level of engagement. A follow-up survey will be used to accurately measure the goal¿s desired impact and is considered in direct support of the proposal¿s goals.

Goals Five and Seven are achieved during the professional development component of the product. Both goals would be measured by the output of committees working to create lesson plans and curriculum alignment. The inter-district partnership will help drive improvement in the cooperating districts. These goals are not seen as finite within the framework of the proposal, but would be groundwork to continued development within the school districts.

Goal Six is viewed as educationally attainable and would be measured with surveys of implementing teachers and students. The proposal¿s goals work to link student learning and effective instruction. Prompt remediation, clarification and assessment will improve a teacher¿s understanding of student progress in meeting academic standards. School improvement plans in all the schools reflect a strong connection to using technology to improve student engagement and motivation

METHODS/ACTIVITIES

The school district will use effective teaching practice standards as a method to embed instructional technology into the teaching framework. The expertise of our teacher-trainer and of teachers in our partner corporation will provide the required resources to focus the development of this district¿s staff toward attaining our goals. The teacher-trainer will utilize large group, small group, and individual lesson modeling to instruct staff on effective uses of these technologies. Classroom lessons will be presented by the teacher-trainer to staff members as demonstrations and will work with them to create their own applications within their daily lessons. Teachers who rate themselves as reluctant technology users will be paired with teachers who consider themselves competent or a high-end user of technology.

Team approaches to planning in subject areas will distribute the workload in creating effective lesson application and promote a core understanding of the technology¿s ability to enhance the student experience.

Interactive tablets, such as the InterwriteMobi (Mobi), provide a multi-user interface designed to support student-centered, collaborative learning. The teacher and student can concurrently interact with and contribute to the same digital content. This technology¿s application to the classroom can produce a higher level of student engagement and participation in all subject areas.

In the elementary grades of 2-4, interactive tablet usage can be used in many daily instructional settings. As a whole group tool, multiple Mobi¿s can be utilized to provide interaction in reading. Each of the standards can be addressed in whole group or small group settings using the Mobi response tablet. Skills activities can be presented in a manner to increase the level of student engagement and, by using multiple Mobi¿s, larger numbers of students can be responding and participating. The Mobi can be easily adapted to writing process instruction as well. Students can interact with peers to refine ideas, engage in storyweb analysis and use for advanced organizer activities.

Interactive technologies proposed in this grant will have a depth of potential in the area of mathematics at all grade levels. Mobi¿s present an interactive platform that is ideal for teachers to present activities in math process standards aligned with the new State Standards. Students can use the Mobi to demonstrate the rationale for answers; be able to provide demonstrations to problem solve; recognize mathematical applications in other contexts; and use various representations to model, interpret physical, social and mathematical phenomena. This would be applied across all grade levels and become a target for the development of lesson activities during professional development.

Student responder technology will be used in a variety of applications across grade and subject areas. Using peer-to-peer pairs, the teacher can provide questions that require the student pair to first analyze data and reach a consensus response. The peer pair then submits responses using this technology and the teacher can provide immediate feedback. Another example may provide students with a webquest related to science and weather. Following their completion of the syllabus activities, a quiz would be administered to students using the responder technology. Questions would span higher levels of thinking. The teacher would have immediate feedback on student understanding. Questions regarding student motivation for learning would be included as a benchmark point for the teacher.

Responder technology can be applied to all levels of student learning. In RtI applications, student responders can provide instantaneous formative assessment during instruction. This permits the instructor to quickly assess student understanding before moving on to the next topic. This technology also permits the download of state standards to support content-alignment.

PROFESSIONAL DEVELOPMENT

The proposal¿s professional development plan includes the employment of a ¿technology trainer¿ to provide support for the classroom teacher¿s efforts to bring interactive learning to students. The trainer will conduct workshops and seminars prior to the dissemination of the technology to the classrooms.

The timing will depend on the scheduled arrival of the hardware and installation of required software and infrastructure. The trainer will be able to provide hands-on demonstrations to teachers of interactive instructional applications. Additionally, the trainer will be available to provide support for teachers¿ independent initiatives to employ the technology in the classroom. The trainer would be a person with highly developed instructional skills and be able to model effective instructional applications to classrooms. The trainer will work with the partner corporation¿s technology staff to problem-solve issues that arise in using the technology. The trainer¿s primary mission is to provide support to teachers that increases the capacity to integrate instruction and technology which has a positive impact on student participation in learning. The trainer would also be available to our participating parochial school to assist the staff in a manner which facilitates the attainment of their desired outcomes.

An integral component of this proposal is the development of ¿lesson banks¿. Professional development will provide opportunities for teacher to collaboratively share experiences and develop effective lessons incorporating instructional technology. Sessions would occur during the school year and would overlap into summer. Elementary staff members would focus on lesson development in the areas of reading and mathematics as related to the state standards and district curriculum. Middle School staff would focus on mathematics and science instruction and the inclusion and alignment of instructional practice with I-STEM standards. Lessons developed through this process would be made available to all teachers in the district for replication as the district technology plan expands the access to interactive technologies.

A likely schedule of professional development is outlined below:

- Late Spring, 2010 ¿ Order materials and equipment; install infrastructure needed; begin initial training where possible

- Early Summer, 2010 ¿ Technology trainer selected; ¿Train the trainer¿ initiated; works with partner corporation staff to understand their experiences regarding implementation

- Late Summer, 2010 ¿ Following installation and depending on availability of delivery, trainer would conduct preliminary workshops for teachers in the target elementary schools on the technology; middle school department chairs would work with the trainer similarly; partner corporation faculty presentations to implementing staff.

- Fall, 2010 ¿ Trainer initiates formal training of elementary and middle school staff on the use of the technologies; works with classroom teachers as implementation progresses; model lessons presented;

- Spring, 2011 ¿ Ongoing trainer support for classroom teaching staff; workshops on effective teaching with technology; begin to develop collaborative lessons in reading and math at elementary level; begin to align middle school math and science curriculum with I-STEM standards

- Summer, 2011 ¿ Collaborative workshops to create lesson banks for curriculum topics in reading and math for elementary staff and science/math for middle school staff; posting/distribution of lessons to all staff members

The comprehensive professional develop goal is the creation of embedded instructional practices utilizing interactive technology and promotion of effective instructional practices that improve the learning of all students, especially those considered at-risk.

FORMATIVE/SUMMATIVE EVALUATION

A recently completed survey of staff on technological competence, usage and instructional applications of technology serves as the basis for subsequent evaluation for the proposal¿s goals. A staff summative assessment will be a second submission of the initial survey to determine changes in attitudes toward technology, frequency of classroom usage and embedding of effective instructional practices with interactive technology applications.

Students will complete a survey prior to implementation to assess attitudes toward instruction, their perceived level of engagement in instruction and the ability of the technology to provide added opportunities for feedback, remediation and extension of learning. The same survey will be used at the conclusion of either the school year or a course of study, depending on the grade level and program options available to the student. This data will help determine student attitudinal changes following classroom instruction that utilizes interactive technologies. The survey for middle school students will include items asking students to provide open-ended responses to evaluate differences noted in classes that have the technology to those that do not.

Student grades in subjects where the technologies are used will be monitored by the teacher and principal. We would anticipate a higher level of performance related to the student attitudes to interactive technology instruction. Also to be monitored, will be course selections of middle school students. One of the desired outcomes is to provide instruction that challenges students to attempt higher levels of coursework in succeeding years for science and mathematics.

Administrators will monitor teacher usage and lesson integration of technology through the established teacher evaluation process and through informal discussions with staff. Building walk-through techniques will further the monitoring process in the classroom instruction. Appropriate administrators will also assess the level of academic rigor in middle school science and mathematics as they pertain to the alignment of instruction with I-STEM standards. Department chairpersons at the middle school for science and mathematics will also monitor the instructional practices to advance this goal.

The teacher-trainer will use a log to validate training opportunities, classroom presentations of modeled lessons. The log will serve as a monitor for professional development as well as implementation levels within classrooms. Teachers not requesting assistance may indicate reluctance to implement the technology rather than an assumed advanced level of competency and the log would indicate a need to further assess the teacher¿s competency with the technology. Feedback from the trainer is viewed as an important measure of the progress to full implementation of interactive technology and progress

toward full goal attainment, but would not be viewed as an evaluation component of the teacher evaluation process.

Teachers will complete an instructional audit for a two-week instructional cycle in September prior to implementation and then in May as the year is completed. The instructional audit targets specific desired behaviors for the daily inclusion of instructional technology. Each school principal will utilize the September instructional audit as baseline data regarding teacher integration of technology into daily instruction. It will enable us to further guide professional development needs. The May instructional audit will use the same instrument from September and provide information to the current daily usage of interactive technology following the year¿s professional development. This will allow a comparison of professional development success and measure the teacher¿s incorporation of interactive technology. The district will be able to assess the overall success of implementation as it pertains to daily instruction using interactive technology provided through this g

LOCAL MATCH

$70,000

The school district will provide funding in excess of the 15% requirement of the grant. District funds will support the implementation by extending the purchasing power of the grant to include additional interactive technology available to the teachers and students in the targeted schools. It could include the cost of substitutes for staff development. The district will assume a portion of the teacher-trainer salary should the individual¿s salary exceed the budgeted amount. The local funding level will be $70,000.00. This amounts to 23% of the base funding level of $300,000.00.

PARTNERSHIPS

Grant implementation is supported through a partnership with the School City of Hobart. Hobart uses interactive technologies at both the elementary and middle school levels and has teachers and technology support personnel that are proficient in the day to day application in instructional settings. Hobart schools have progressed through a sequence of technology applications that enables them to further their supportive role.

Once grant funding is secured, teachers from LCSC¿s implementing buildings will be identified to attend a professional development visitation to teachers in the Hobart schools who are considered ¿high end users¿ of interactive technology. Hobart has interactive whiteboard and interactive tablets currently in use in the elementary and middle schools. They are also using student responders in instructional applications. Teachers in Hobart schools are proficient in this technology and willing to provide support and direction to LCSC teachers. Hobart¿s Director of Instruction, Shannon O¿Brien, has been working with the Directors of Primary and Secondary Education, Mark Kellogg and Al Gandolfi, for LCSC in a guidance capacity for technology selection. There is a strong desire to further partner in the collaboration of lesson development that benefits the students in both school corporations.

Specifically, Hobart¿s Director of Instruction will identify staff partners and coordinate site visitations that occur in Hobart schools. She will facilitate demonstration sessions for teachers in the LCSC and our participating parochial school at appropriate LCSC buildings. Mrs. O¿Brien has historical knowledge of the LCSC having been a teacher in the district prior to moving to an administrative position in School City of Hobart. Contributing to her ability to support this partnership effort is the fact that she has actually taught in two of our participating LCSC schools. She has an outstanding reputation for her knowledge and would be well-received by staff of the LCSC.

The Hobart Director of Technology will provide guidance and insight to the LCSC Director of Technology especially in the areas of hardware selection, setup, and software installation. The mutual exchange of experience to the LCSC will enable us to avoid potential problems with hardware and software integration into our current level of technology available in the schools.

Teachers within the Hobart schools will provide onsite expertise for demonstration visitations to Hobart schools. They will be utilized to assist LCSC teachers with understanding the basics of the technology and enable a more rapid inclusion of the technology into daily classroom instruction. Being able to benefit from their prior experience will enable teachers and students in the LCSC target buildings to have heightened access to this instructional technology. Teachers will have an outlet to discuss problems, concerns, and exchange ideas with the creation of an inter-district technology cadre.

The professional development included in this plan recognizes the need to provide teachers with time to create effective lessons and practice effective instructional practices. Professional development will provide opportunities for teachers from each district to work collaboratively during summer to create a shared bank of lesson plans. Hobart¿s experienced teaching staff will enable the teachers of LCSC to gain greater understanding of interactive technology¿s application to improved instruction for students.

LCSC feels the partnership opens a vital line of cooperation and communication between the school corporations. That communication will alleviate pitfalls and provide a basis for a smoother transition for teachers into interactive instruction and positively impact student learning. It will also enable the district to learn from those who have prior experience to better provide effective hardware for the betterment of students.